



**MISSOURI DEPARTMENT OF TRANSPORTATION  
MATERIALS ENGINEERING  
Jefferson City, Missouri**

**Test Method  
MoDOT T64  
DEFLECTION TESTING OF PAVEMENT**

**1.0 Scope.** This method covers the procedure for determining deflection of pavement when undersealing, in accordance with the specifications. This test is normally performed by the contractor, using contractor equipment, in the presence of the MoDOT engineer.

**2.0 Apparatus.**

**2.1 Gauges:** Four gauges on two gauge mounts, two gauges per mount, that are capable of detecting slab movement of 0.001 inches.

**2.2 Test Vehicle:** Vehicle having a dual-tire single axle with an 18,000 pound single axle load.

**3.0 Procedure.**

**3.1** Position one set of gauges as shown in Figure 1.

**3.2** Zero both gauges to the pavement surface with no load on the slab on either side of the joint or crack.

**3.3** Slowly move the test vehicle into position and stop it when the center of the test axle is one foot behind the joint and the outside test wheel is one foot from the pavement edge, as shown in Figure 1.

**3.4** Read both gauges and record the results.

**3.5** Slowly move the vehicle across the joint and stop it when the center of the test axle is one foot past the joint, as shown in Figure 1.

**3.6** Read both gauges and record the results.

**3.7** Repeat this procedure at every transverse joint and designated crack or pavement repair patch.

**3.8** A MoDOT inspector will be responsible for reading and recording the gauge results.



#### **4.0 Deflection Testing Before Undersealing.**

**4.1** When required by contract, the contractor shall test each joint, crack and pavement repair patch in accordance with this test procedure.

**4.2** Any joint, crack or pavement repair patch that has a joint efficiency of 65 percent or more, and (a) a loaded slab corner deflection of 0.0175 inches or more, or (b) which ejects water when loaded or (c) which displays indications of past pumping, shall be undersealed.

**4.3** When directed by the engineer, any joint or crack that has a joint efficiency of 64 percent or less and any of the conditions required for undersealing as described above shall be removed and repaired in accordance with Sec 613.

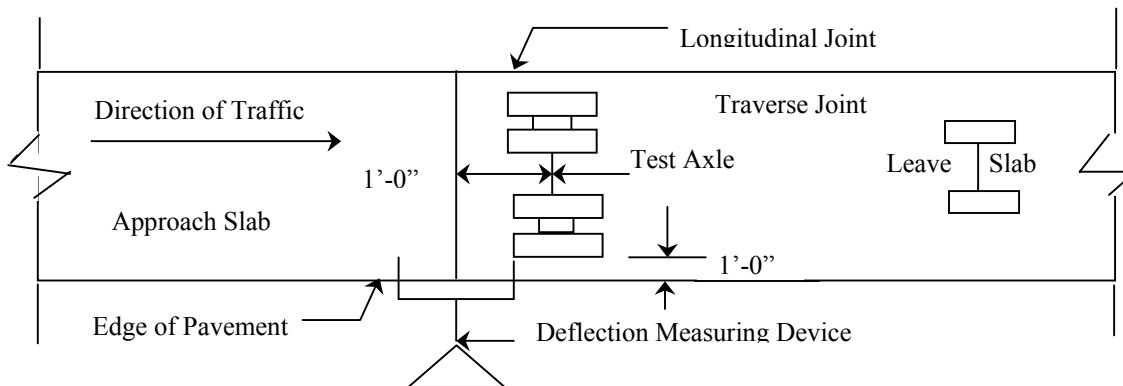
**4.4** To determine action to be taken, the highest loaded slab corner deflection and the lowest joint efficiency at each joint or crack shall be used. Joints or cracks with deflection measurements of 0.005 or less on both sides of the joint or crack will be considered to have a joint efficiency of 65 percent or better, regardless what the calculated joint efficiency is. Joint efficiency (JE) will be calculated as follows:

$$\% JE = 100 \times (\text{Unloaded Slab Corner Deflection}) / (\text{Loaded Slab Corner Deflection})$$

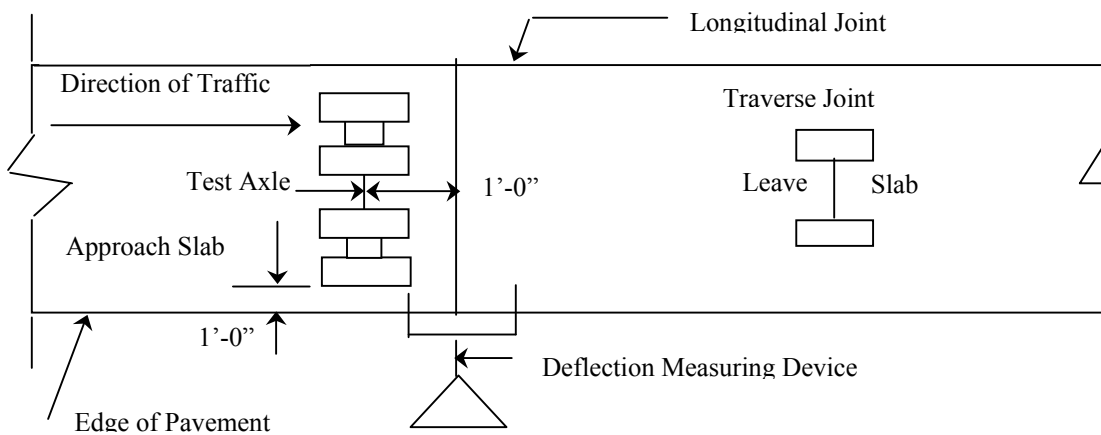
#### **5.0 Deflection Testing After Undersealing.**

**5.1** Twenty-four or more hours after grouting and prior to acceptance, each stabilized joint, crack and pavement repair patch shall be re-tested for deflection. Slabs which deflect 0.0175 inches or more shall be re-grouted and re-tested as directed. Any slab which continues to show movement in excess of that specified after two properly performed groutings may be accepted or the slab may be removed and replaced as directed by the engineer.

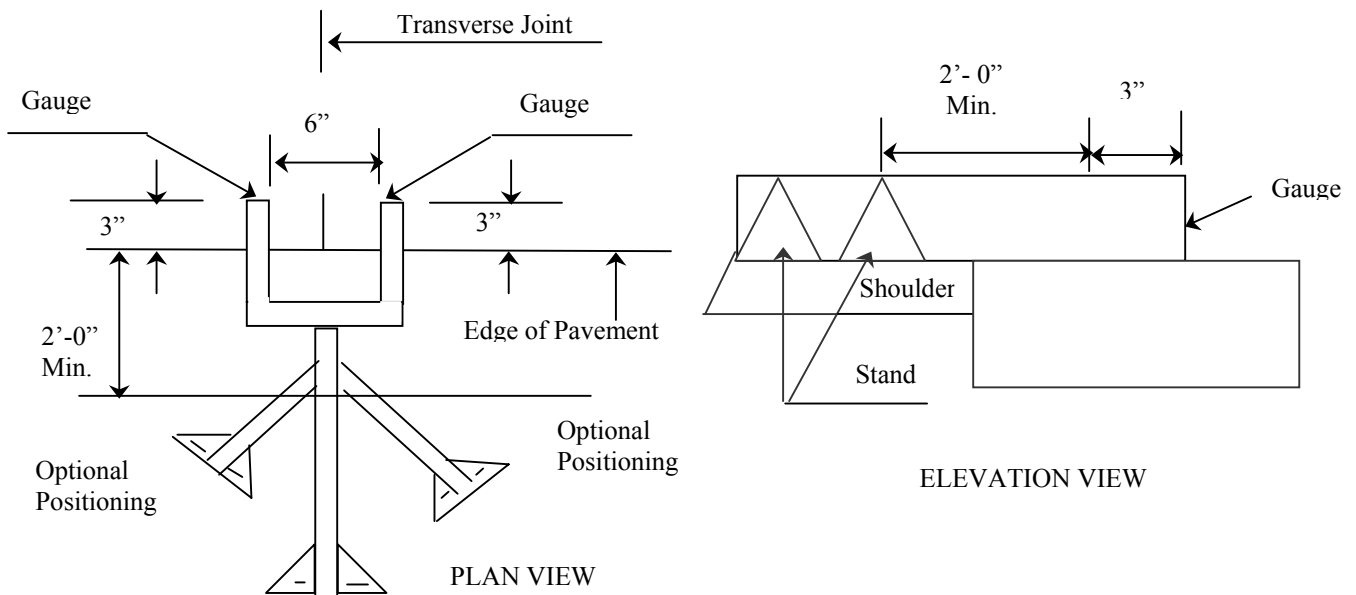




POSITION OF TEST AXLE FOR TAKING DEFLECTIONS WITH LOADED LEAVE SLAB



POSITION OF TEST AXLE FOR TAKING DEFLECTIONS WITH LOADED APPROACH SLAB



TYPICAL PLACEMENT OF APPROVED DEFLECTION MEASURING DEVICE AT JOINT  
FIGURE 1 "PROOF ROLLING" PROCEDURE